

# ARMY COMMUNICATOR

September 2019

TechNet Augusta 2019



# TechNet Augusta 2019

**Plus:**

- *Joint Exercise*
- *Technical Assistance Labs*
- *Signaleer Spotlight*



# Contents

3.  
**Command Team**
4.  
**Signaleer Spotlight**
5.  
**TechNet Augusta 2019**
9.  
**Technical Assistance Labs**
13.  
**Joint Exercise**
16.  
**Harnessing the Power of Data**
20.  
**Preparing for the Near Peer Communications Battle**
24.  
**FA26 Panels Convene in October**

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Opinions expressed herein do not necessarily reflect the views of Office, Chief of Signal, the US Army or the Department of Defense.

Submit articles, photos, graphics, videos, story ideas, and nominations for “Signaleer Spotlight” to the editor [here](#). For additional information, please call (706) 791-7384.

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Chief of Signal

CSM Richard D. Knott  
Signal Corps Command Sergeant Major

CW5 Garth R. Hahn  
Signal Corps Chief Warrant Officer

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Editor-in-Chief

## **On the Cover**

TechNet Augusta 2019 was held Aug. 19-23 at the Downtown Marriot in Augusta, Ga.

Photo by Nick Spinelli



# Chief of Signal Regimental Team

Welcome back to another edition of the Army Communicator! We recently had the opportunity to participate in the annual TechNet Augusta event, themed “Combined Arms Maneuver in Cyberspace: Building the Multi-Domain Force.” The event is sponsored by AFCEA, an organization designed to “provide a forum for military, government, and industry communities to collaborate so that technology and strategy align with the needs of those who serve.” Signal and Cyber Corps leaders and students joined Industry leaders for TechNet Augusta. This was a four-day event held here in downtown Augusta.

TechNet provides an awesome opportunity for our Soldiers to engage with Industry partners through panels, lectures, and exhibits. It offers continuing education courses to maintain industry level IT certifications, special programs for small businesses, and insight into upcoming business opportunities. This event opens lines of communication and facilitates

networking, education, and problem solving.

TechNet allows us to connect with industry and gain understanding on the latest and greatest of emerging technology. With the Army moving toward large scale combat operations, it is vital that we, as the Signal Corps work together with Industry to increase our capabilities for the future fight. It is events like this that help keep us relevant and modern when compared to our civilian counterparts. We are building bridges between Industry, the Army, and our veterans.

With over 250 vendors and 4,700 attendees, the event’s intent was far exceeded. This was the largest turn out yet and I can say with certainty, every single person walked away with new knowledge, a new idea, or a new working relationship. Expectations are easy to surpass when great minds work toward a common goal. Remember, we want to hear from you about what is going on inside your unit. If you would like to submit an article or photographs that demonstrate the Signal Regiment in action, please contact us.



BG Christopher Eubank  
Chief of Signal



CSM Richard Knott  
Regimental CSM



CW5 Garth Hahn  
Regimental CWO

## Signaleer Spotlight

Jason Cutshaw  
Redstone Arsenal

When training with "Devil Dogs," Soldiers sometimes go "Gung Ho."

Spc. Brent Ching, a satellite communications controller with Company E, 53rd Signal Battalion, recently graduated from the Marine Corps Lance Corporal's Course at Camp Foster, Okinawa, where he received the "Gung Ho" award, the Marine Corps equivalent of honor graduate.

"Going through the course with the Marines was a great learning experience being able to interact with another branch of service," Ching said. "It was an opportunity to do something outside of the normal day-to-day that I feel will help me be a better and well-rounded Soldier."

Ching is the second attendee of the course from his company and the first Soldier to ever be awarded this distinction in Okinawa.

During the course, Ching trained as a Marine and was held to the same standards and expectations. Aside from having his uniforms inspected by Marines to Army regulations, he participated in Marine physical training, or PT, which included a 3-mile run, pullups and crunches.

"A highlight of the course was the instruction portion not being presentation-based, i.e. PowerPoint," Ching said. "The course was led as a Socratic Seminar, focusing on small and large group discussions based around the philosophy and ethics of leadership."

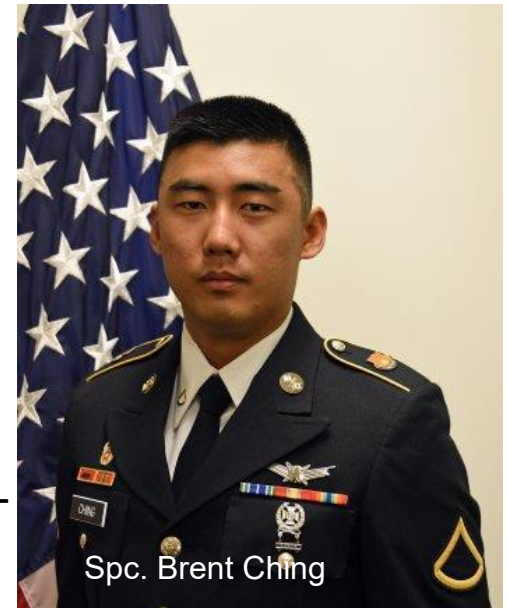
"Another highlight was an external evaluation of the physical fitness via the Marine PT test," he added. "Having an alternate evaluation to the Army Physical Fitness Test was beneficial to my own physical training."

Ching then explained how the course differs from Army courses he has attended.

"Army mandatory courses tend to focus more on classroom instruction and checks on learning rather than active discussions," Ching said. "This course focused more on discussions following the instruction. This allowed class members to compartmentalize and troubleshoot the actual intent of the instruction provided. The class was enjoyable and developed me as a person and leader."

He said his classmates showed him respect after he received the award and that there are benefits of training with members of the other military branches.

"I would encourage others to take any opportunities to train and work with our brother and sister services," he added. "It is an excellent opportunity to broaden horizons, at a personal level, as well as build interpersonal relationships between the branches, strengthening the entire U.S. military core."





# TechNet in Augusta



The US Army Signal School was well represented alongside the US Army Cyber School and the Cyber Center of Excellence at TechNet Augusta. Photo by Nick Spinelli



Nick Spinelli  
Office Chief of Signal

Military members from Cyber and Signal regiments joined Industry Leaders and partners for TechNet Augusta, Aug. 19-23 in Downtown Augusta. The annual event was sponsored by AFCEA, a professional association designed to “enable military, government, industry and academia to align technology and strategy to meet the needs of those who serve.”

The four-day event offered attendees the opportunity to see the latest innovations and advancements available, as well as attend forums and discussions on the future of the industry.

“TechNet Augusta gives participants the opportunity to examine and explore the intricacies of the cyber domain,” AFCEA representatives said, describing the event on the organization’s website. “With assistance from the U.S. Army Cyber



Brig. Gen. Christopher L. Eubank, Signal School Commandant and Chief of Signal briefs on the past, present, and future of the Signal Regiment at TechNet Augusta.  
Photo by Nick Spinelli

Center of Excellence and industry experts, the conference is designed to open the lines of communication and facilitate networking, education and problem solving. Leaders and operators also discuss procurement challenges the military, government and industry face during a time of uncertain budgets and runaway technology advances.”

These year’s theme was “Combined Arms Maneuver in Cyberspace: Building a Multi Domain Force.” During his keynote address, Gen. Paul Funk, Commanding General, US Army Training and Doc-

trine Command, said this theme was especially appropriate in today's climate, and that the joint efforts of the private sector and the military are more crucial than ever.

"Support and defense of our country is a team sport...no one person has the answer for the challenges that face us. That's why forums like this are so important," he said.

In addition to the numerous educational opportunities available at TechNet, Office Chief of Signal held a Training with Industry (TWI) workshop in conjunction with the conference. This activity within an activity offered a panel of Cyber and Signal officers, warrant officers, and non-commissioned officers to learn "Best Practices," from industry leaders and discuss lessons learned from developmental assignments at technological

companies such as Verizon and Microsoft.

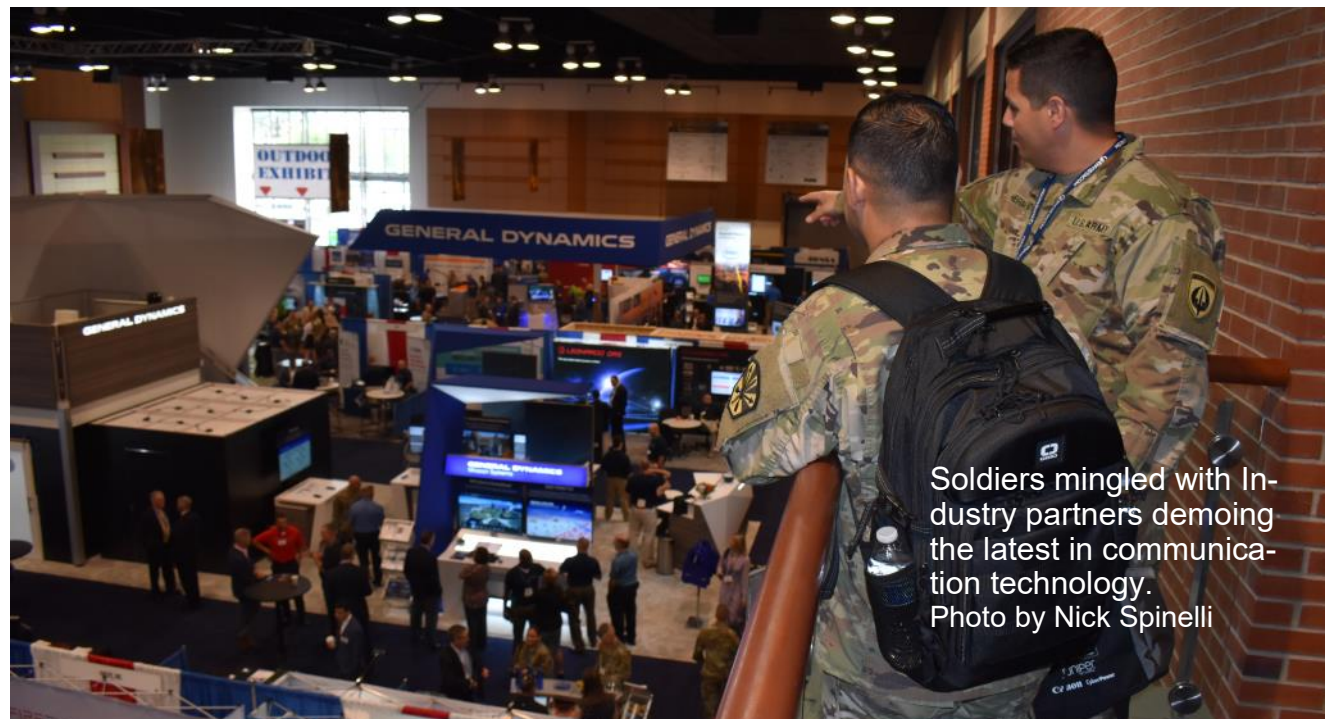
"Our goal is to send out the best, have them learn and develop new skills, and then bring them back into the force in order to improve organizational processes," explained Jim Busler, Force Integration Specialist for the Office Chief of Signal Officer Division.

The TWI workshop covered a range of topics, including network modernization, operational integration, and more.

"There was a lot of great information provided during the workshop, Cpt. Warren Nickson, a TWI Fellow, said. "In fact, there were a number of things we learned that I wish I had known during the beginning of my TWI cycle."

Although the workshop spanned the entirety of the conference, TWI Fellows were still given the opportunity to attend other TechNet activities.

"I really liked that we were able to breakaway and listen to some



Soldiers mingled with Industry partners demoing the latest in communication technology.  
Photo by Nick Spinelli



of the keynote addresses and senior leader panels,” Cpt. Suhan Kim, another TWI Fellow, said. “They gave us a broader perspective on where the Signal Regiment is going.”

One such presentation was given by Brig. Gen. Christopher L. Eubank, Signal School Commandant and Chief of Signal, who briefed on the past, present, and future of the Signal Regiment. In his remarks during and after the conference, the commandant reiterated how effective events such as TechNet are in the growth and development of the force.

“Technet is an opportunity for us to really communicate with our industry partners and take a look at the road ahead in regards to communication technologies and their potential applications force-wide,” he said.





# High Frequency Communications Technical Assistance Labs



Two Airmen from the 224th Joint Communications Support Squadron, Brunswick, Ga., string HF communication lines across the open terrain, during the HF field Lab on Fort Huachuca, Ariz.  
Photo by Gordon Van Vleet



Gordon Van Vleet  
NETCOM Public Affairs

The U.S. Army's battlespace has long benefited from the use of wireless communications for over 100 years. In fact, it was here in the Southwestern states of Arizona, New Mexico and Texas that during the U.S. Border Service and Pershing's Punitive Expedition of 1916; the U.S. Army Signal Corps first deployed base and mobile wireless telegraphy sets capable of transmitting 2000 words a day under battlefield conditions. These wireless sets would later spark the beginning of long distance transmission technology a precursor of High Frequency (HF) radio communications.

Hence, the importance and legacy of long-distance communications and (HF) continues on a global scale here through the efforts of the Army MARS [Military

Auxiliary Radio System] station headquartered at Fort Huachuca, Ariz. Army MARS is a Department of Defense sponsored program which utilizes Amateur Radio operators to contribute to the mission of the Department of the Army, and is assigned to the Network Enterprise Technology Command.

So, to assist more diverse communication efforts, NETCOM's MARS developed a series of advanced HF communication technical assistance labs supporting a number of Joint tactical units, said Paul English, Chief of Army MARS and the NETCOM Land Mobile Radio Project Officer.

"Each tech assistance session includes two to three personnel funded by their parent unit," said English. "During some of these sessions, we've also had Soldiers from the 40th [40th Signal Battalion, Fort Huachuca, Ariz.] participate to give the session a more joint flavor," said English. "These tech assistance sessions are hands on ... no death by PowerPoint."

"What we are doing is best described as a Technical Support," said David McGinnis, a government contractor supporting the lab's efforts. "We are working with NCOs from various units to help them with the unique challenges they are facing employing and training HF radio in their units." To ensure the labs provide tangible results, each lab is tailored for those attending.



Air Force Tech. Sgt. Mike Barber (left) and Tech. Sgt. Neil Howard, both from the 224th Joint Communications Support Squadron, Brunswick, Ga., work to establish communications during the HF field Lab on Fort Huachuca, Ariz.  
Photo by Gordon Van Vleet



"What we are doing is entirely focused on them, and because of that each lab is very different," said McGinnis. "To a great extent we listen to what they have to say when we first meet them and customize the experience of the three days they spend with us. For instance, the ASOS units [Air Support Operations Squadron] and the Joint Communications Support Squadron need to focus on employing HF in austere and contested environments, utilizing field expedient antennas and terrain to maximize the potential of the equipment they carry. Other units come with much larger antenna systems, amplifiers and we focus more on engineering, power budgets, text-chat software, etc.

And the benefits of the hands-on lab isn't missed by those attending.

Air Force Master Sgt.

Benjamin Gwaltney, 224th Joint Communications Support Squadron, Brunswick, Ga., who was attending the lab in early June said he would definitely recommend it to others. "I have attended many formal schools throughout my career provided by both TRADOC [Army Training and Doctrine Command] and AETC [Army Education and Training Command]. I feel the flexibility of the instructors and the lab was more beneficial than typical structured courses."

Gwaltney, who was attending the training with two other airmen; Air Force Tech. Sgt. Neil Howard and Tech. Sgt. Mike Barber, said the lab was very hands on and the instructor did an excellent job explaining the concepts and equipment that they were unfamiliar with, which resulted in a better understanding of HF communications.

"These labs are important because there is a lot of focus on preparing for a conflict with a near-peer adversary, or one of their proxies today," said McGinnis. "This is a big shift for a force that has been focused on fighting insurgents for the last 15 years. This is just one part of the larger effort to get back to basic, even low-tech skills.

"We try to be very interactive in our approach, maintain a continuous discussion through what is essentially an engineering decision making process," said McGinnis when asked about the importance of a hands on approach. "It is important to go through the planning

Airmen from the 224th Joint Communications Support Squadron, Brunswick, Ga., secure and anchor the HF communication lines, during the HF field Lab on Fort Huachuca, Ariz. Photo by Gordon Van Vleet



and engineering process and conclude that with the actual radio shots they designed." And that was where the hands on experience helped.

"We do a point to point radio shot to an Army unit about 2,000 miles away, using typical tactical equipment and simple antenna upgrades we show them," said McGinnis. "Most of these folks have only read about that kind of radio shot, or seen it on a power point. Here, they actually make that happen and see it work, experiencing the entire decision making process from the power budget, propagation and antenna models to selecting the appropriate radio frequencies and antenna systems.

The labs also help with creative thinking in the world of HF communications. "Most often the antennas they have won't do what they need effectively,

and we show them simple ways to add a lot of value to this equipment using common materials," McGinnis said. "At the end, we close the loop by taking them back to the initial power budget and have them validate their assumptions."

Those attending the labs are mostly NCO's who already have a fair amount of experience, said McGinnis. "They are here because they are ready for a "next level up" experience. It would not be possible to do this inside of one week with people who are brand new to the subject matter - so for the limitations of this venue, motivated people with prior experience is required.

"The feedback so far is usually pretty enthusiastic," McGinnis said. Those attending the lab seem to appreciate the customized approach, he added.

Complexity mixed with creativity could best describe the HF labs focus and mission. "HF radio is an out of the box medium, it's not magic, but it requires some dynamic and creative thinking to be successful," said McGinnis.



David McGinnis (left), a government contractor supporting the HF lab's efforts, and Air Force Master Sgt. Mike Barber and Tech. Sgt. Neil Howard, watch as Tech. Sgt. Mike Barber (far background), runs the HF communication wire across open ground, during the HF field Lab on Fort Huachuca, Ariz.  
Photo by Gordon Van Vleet



Coast Guard Capt. Scott Hale, Senior Representative - Homeland Security Task Force Southeast; Navy Rear Adm. John Schommer, Deputy Commander - Joint Task Force Migrant Operations; and Maj. Gen. Mark Stammer, Commanding General - Joint Task Force Migrant Operations.

Photo by Coast Guard Petty Officer 2nd Class Travis Magee

# Joint Exercise Demonstrates Real-World Capabilities





Air Force 1st Lt. Matthew Nixon  
Joint Communications Support  
Element

The Joint Communications Support Element (JCSE) joined forces with U.S. Southern Command (USSOUTHCOM), U.S. Army South (ARSOUTH), Air Force South (AFSOUTH), Marine Forces South (MARFORSOUTH, Navy South (NAVSOUTH), Special Operations South (SOCSOUTH), 167<sup>th</sup> Theater Sustainment Command (TSC), the Department of Homeland Security, the Department of State, and the US Coast Guard (USCG) to improve their ability to operate as a team in the event of a mass migration, during exercise Integrated Advance 2019 (IA). The exercise took place this past spring with 24 hour operations to simulate a real world Joint Task Force, overseen by USSOUTHCOM and exe-

cuted at Joint Base San Antonio- Fort Sam Houston (JBSA) by ARSOUTH.

The exercise anticipated the mass migration of people from multiple Caribbean islands after a series of natural disasters devastates the area. The goal of the scenario was to effectively interdict and repatriate the migrants at sea who were attempting to enter the United States.

IA is an annual USSOUTHCOM sponsored interagency exercise that focuses on supporting the Department of Homeland Security and the Department of State in the event of a humanitarian crisis in the Caribbean.

“This exercise was a tremendous opportunity for federal, state, and local agencies to practice a whole of government response to a maritime mass migration in the Caribbean,” USCG Capt. Scott Hale, Senior Reserve Officer at USCG Seventh District and the Senior

Maj. Gen. Mark Stammer, Commanding General - Joint Task Force Migrant Operations; Command Sgt. Maj. William Rinehart, Command Sergeant Major - Joint Task Force Migrant Operations; and Coast Guard Capt. Scott Hale, Senior Representative - Homeland Security Task Force Southeast.

Photo by Coast Guard Petty Officer 2nd Class Travis Magee





DHS Representative to Army South, said. “Support from US Southern Command and its components are absolutely critical to the success of this humanitarian and national security mission.”

Most of the exercise is simulated and designed to improve command and control among governmental agencies focusing on interoperability with DHS and USSOUTHCOM.

During the scenario-driven exercise, Joint Task Force - Migrant Operations (JTF-MIGOPS) practiced the ability to temporarily house migrants in a safe and humane manner until they could be repatriated to their country of origin.

The role of JCSE in this exercise focused on providing rapidly deployable, early entry, scalable command, control, communications, computer, coalition, intelligence, surveillance,

and reconnaissance (C5ISR) capabilities to other agencies during the simulated operation.

“JCSE provided a key capability that enabled ARSOUTH to manifest into JTF-MIGOPS,” said Col. Kevin Faughnder, US Army, G6 JTF-MIGOPS. “The JCSE team complimented the ARSOUTH G6 team with professional and skilled communicators who were able to quickly mitigate network problems and maintain a stable network.”

The JCSE communications kit used during this exercise is the Deployable Joint Command and Control (DJC2) Core which provides a limited ground-based communications capability designed to support operations until a more robust communications asset arrives in the Area of Responsibility (AOR). In this exercise, the DJC2 Core provided an extension of service capability to extend network support into pre-established infrastructure.

About 600 personnel from the Department of Defense, Department of State, Department of Homeland Security, Health and Human Services, and other agencies across the nation participated in the week-long exercise. Approximately 250 were directly supported by the JCSE at JBSA.

Coast Guard Rear Adm. Peter J. Brown, Commander, Homeland Security Task Force - Southeast  
Photo by Coast Guard Petty Officer 2nd Class Travis Magee





# Topology

Select Remote ASNs

All x

Select Local Regions

All x

Select Remote Regions

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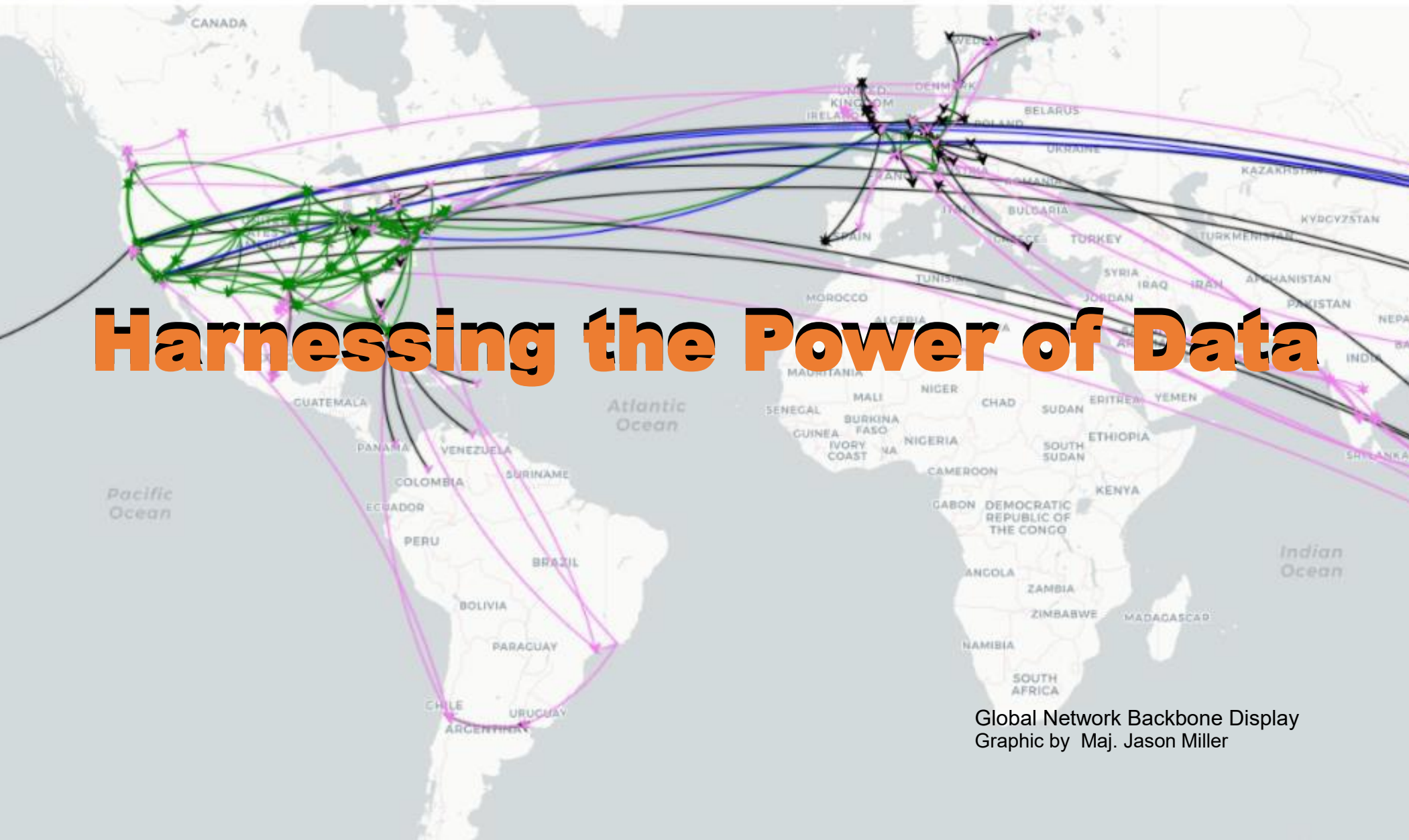
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Network Backbone





Maj. Jason Miller  
TWI-Army Cyber Intel Fellowship

Prior to my Training with Industry (TWI) Assignment with Verizon, I never truly understood nor appreciated the vast amounts of information available across network devices that can produce an accurate and real-time portrayal of information systems and networks. Verizon, a company with over 6 million FiOS customers and over 154 million wireless customers, provides its Army TWI fellows an opportunity to experience how a major telecommunications provider manages its vast and highly robust global network.

One of my first requirements was to capture the physical topology of Verizon's network backbone. While this was easy to create in a Visio file, it was cluttered and difficult to read. Most importantly, this static depiction became outdated almost immediately

due to the dynamic and evolving nature of global networks. To counter this, I located and extracted the data from the interfaces for the Multiprotocol Label Switching (MPLS) routes. Using Splunk as the visual interface to this data, I created the dashboard seen in Figure 1 below using a search that recorded the source, destination, and bandwidth of each route. This search generates a real-time map of the network backbone filterable by Autonomous System (AS) Number, region, and circuit capacity.

With a better understanding of the network backbone, I then looked at various aspects of network traffic. Verizon produces a monthly network report highlighting utilization and volume, broken down by AS and product line (Wireless, FiOS, DSL, Voice, Enterprise, etc.). This report was traditionally produced by hand via Excel each month; however, since all the data comes from a database that compiles its numbers directly from network devices, the report was a natural fit for automating into a live dashboard. Doing this not only negated the need to manually produce the report, it provided an opportunity to customize the report itself and make it tailorable based off the user's requirements. The monthly report could quickly become a weekly, quarterly, or even daily report by simply changing the output period via a drop-down

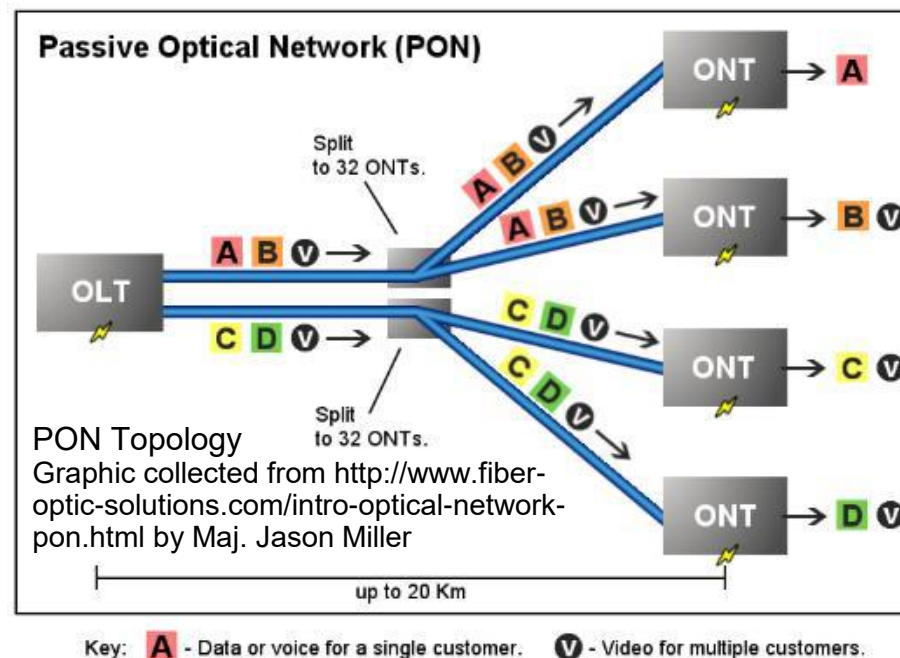




menu. This same data also proved useful as a separate Deviation Report, which provided daily volume and bandwidth totals by Local Access and Transport Area (LATA, a telecommunications term that refers to a geographical area) and showed percent increases or decreases of a particular day as compared to the rest of the sample. This allowed for easy identification of high-traffic periods or low-traffic periods, such as national holidays, Election Day, or Cyber Monday.

In a basic fiber optic topology, the signal reaches the customer end-points via a point-to-multipoint architecture known as a Passive Optical Network (PON) Unpowered PON cards receive the signal from an Optical Line Terminal (OLT), usually located at the provider's central office, and allow a single optical fiber to serve multiple customers by connecting to

the Optical Network Terminal (ONT) located at the customer premises. This architecture negates the use of electrically powered switching equipment by relying on optical splitters to separate optical signals, with powered equipment only located at the source (the router) and receiving (the ONT) ends. While this reduces maintenance and building costs for the network, its passive setup limits the provider's ability to isolate issues and capture detailed information on the entire network. More importantly, the bandwidth in a PON is not dedicated to individual subscribers but rather aggregated across all customers on the shared PON card, with a limitation of 2.4Gbps download and 1.2 Gbps upload. This limitation may result in slower individual customer data transmission speeds during peak usage periods. This limitation, coupled with the growth of 1Gbps customers, creates a scenario where high-usage customers may affect the service of other customers connected to the same PON card. Since the PON card does not provide performance information, any data relevant to the



PON's utilization must be gathered from the router interface using logical sub-interfaces demultiplexed by the router but aggregated by each PON card's unique identifier. The database records this data every 15 minutes and provides the up/down utilization and vol-



ume for the time period for each PON card in the network.

This lack of readily available PON card data necessitated a complicated series of queries to compile the average utilization, peak utilization, and total volume for the over 330K PON cards on the FiOS network. A PON Utilization dashboard I created then displays these search results alongside other relevant information for the entire network. Interactive panels in the dashboard contain drill-down queries, providing Network Operations Center (NOC) personnel the ability to identify PON cards showing the highest percent up or down utilization and further breakout those utilization and volume statistics by customer. Further drill-downs then display the individual customer details



such as their provisioned bandwidth, location, service profile, and other pertinent details.

This dashboard supports not only descriptive analytics in the sense of viewing historical data of high-usage customers, but it also provides a near real-time depiction that can help identify possible trouble spots as--or even before--they occur. The use of a moving average trendline can help locate those PONs with steadily growing throughput that may become future trouble PON cards. Either diverting 1Gbps customers to less-trafficked PON

cards or engineering an increased provisioning for future growth could then alleviate these issues.

Understanding the practical applications of data and converting this data into useful information about the network provided a unique insight into the potential capabilities of data collection. With a little effort and understanding—along with the right tools—anyone can take advantage of existing data sources and use them to provide a better network Common Operating Picture (COP).

A close-up photograph of a soldier, Spc. Terry L. Whitner, wearing a camouflage uniform and glasses. He is focused on working inside a server rack, with his hands positioned near a row of circuit boards. An American flag patch is visible on his left shoulder. The background is a plain, light-colored wall.

# Preparing for the Near Peer Communications Battle

Spc. Terry L. Whitner, a signal support systems specialist in the U.S. Army Reserve assigned to the Signal and Communication Office for the 415th Chemical, Biological, Radiological, and Nuclear (CBRN) Brigade, headquarters and headquarters company out of Greenville, South Carolina, sets up RAID storage during a Command Post Exercise.

Photo by Sgt. Stephanie Ramirez



Maj. Paul Dangelantonio  
Pennsylvania Army National  
Guard

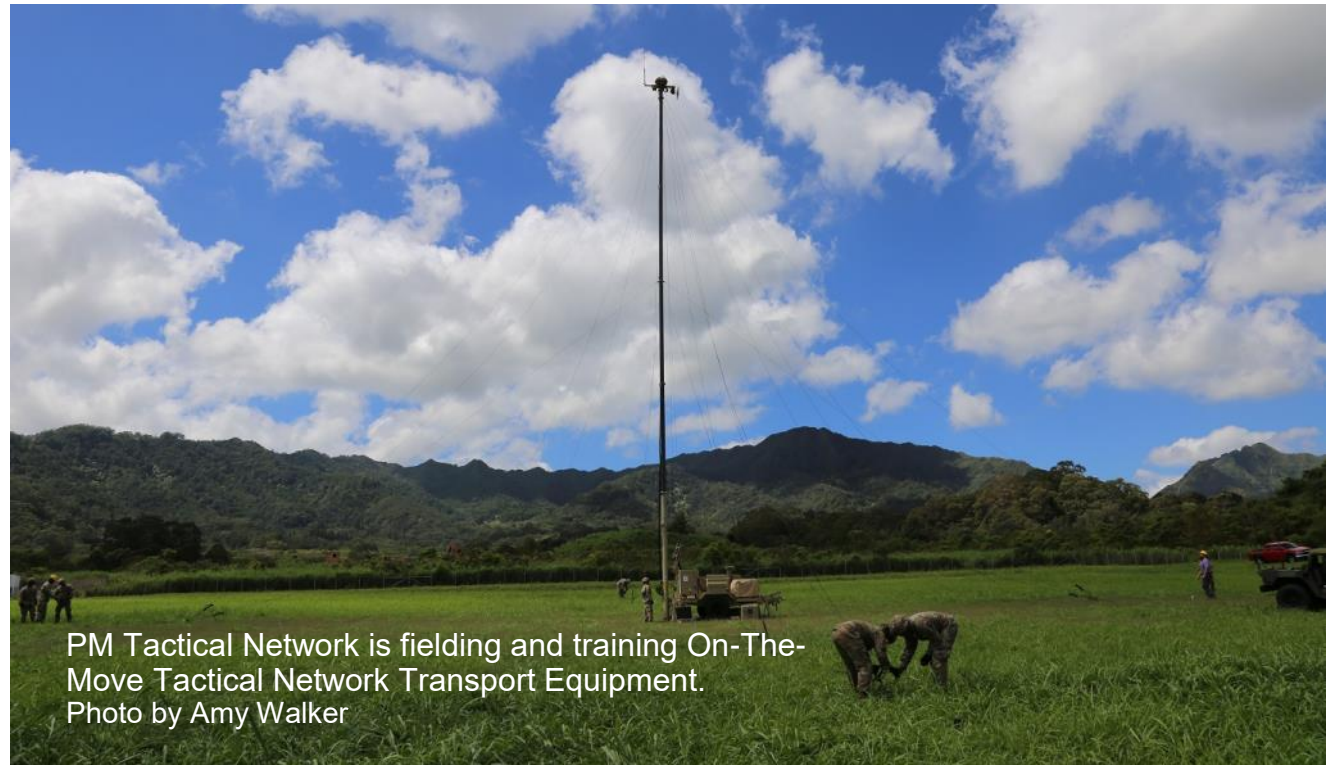
Over the last decade, the Army has enjoyed complete control over the communications battle in Iraq and Afghanistan. We have had 24-7 access to communications at every level of command. This control includes all voice and data communications and complete and uncontested control over the electromagnetic spectrum. Additionally with advances in technology Soldiers have had the same level of communications access from the most remote areas in the combat zone to Forward Operating Bases (FOB) and back to our families at home.

However, the Army can still be better prepared and equipped to conduct battle in a communications contested environment. In order to do that, I believe we have to get back to basics. It should

start with limiting access to personal communications during training events, but additional tactics and transformations are necessary for the near peer communication fight.

High Frequency (HF) Radios (AN/PRC-150) should be the Primary means of lower TI voice communications in the Primary Alternate Contingency Emergency (PACE) plan. They have longer range (depending on weather and atmospheric conditions) than FM, don't need a large antenna (which can be a target), and operate during certain Electronic Warfare jamming. Drawbacks are that HF isn't good on the move and HF radios are the least numbered radio on hand in the division. Also, it's the radio that Soldiers have the least experience operating.

FM communications should be used primarily for companies, platoons and battalion/brigade headquarters as on the move voice com-



PM Tactical Network is fielding and training On-The-Move Tactical Network Transport Equipment.  
Photo by Amy Walker

munications. In the near peer fight, we cannot afford to defend FM re-trans sites because they are vulnerable to detection and attack. However, FM Aerial retrans capability should be explored in future training events because of the low risk high reward capability it can provide to commanders on the ground. Additionally, TACSAT radios need to be more utilized like the HF radios, keeping in mind TACSAT channel availability is mission dependent based on location and real world situations.

In both cases, we should focus on camouflaging antennas, and keeping them as far away from HQs as possible because of its target ability. In a field environment, antenna farms equal targets.

Planning, developing, and implementing a joint yearly Division/JHFQ cyber exercise which includes the



The 2d Cavalry Regiment utilized its on-the-move Tactical Network Transport during a live fire exercise.  
Photo by 1st Lt. Ellen C. Brabo

state cyber security team and all the S6s in the division would be beneficial to fleshing out TTP's, battle drills, SOPs and security protocols that need to be developed and adopted. Additionally, a return to training on Over-the-air rekeying (OTAR), will be key in the near peer communications battle because vehicles/radios/JCR/JBC-P will be destroyed/captured, and COMSEC integrity must be maintained at all times.

Cyber Defense in the near peer communications battle starts at the border of the connection to the STEP or unit peer to peer network connections. There should be a standardized battle drill connection checklist created to establish security baselines in the creation of network to network trusts. We need to know every IP ad-



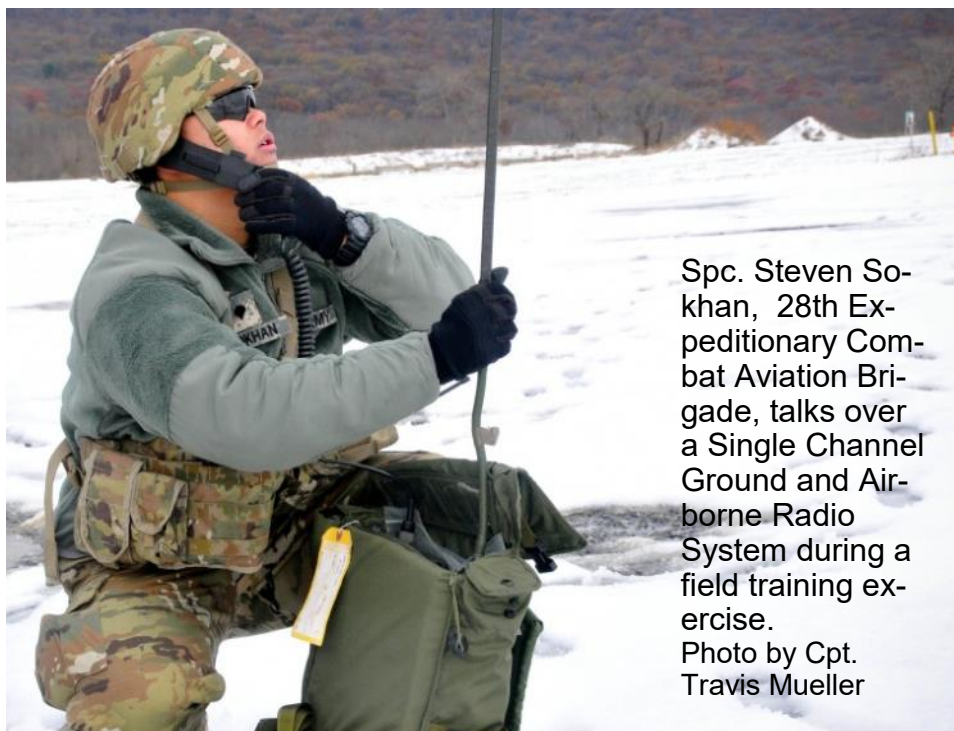
dress on the Lightweight Directory Interchange Format (LDIF) for all upper and subordinate units.

Bottom line is we have to know every single IP address on the network so that scans log inspections can attempt to detect rogue IP addresses. We have to embrace passive vs active cyber defense. We have to actively search/test for vulnerabilities and rehearse cyber-attack battle drills regularly. We have to use the state cyber team or any authorized cyber entity to actively try to penetrate our network. This will help S6s respond to vulnerabilities and develop effective battle drills.

All DAGRs need to be encrypted to avoid GPS location spoofing and units have to train on the jammer finder feature on the DAGR. Units first have to

make sure the COMSEC fill cable is on hand because most DAGRs don't have the fill cable. GPS jamming/spoofing will be a main tactic of the near peer enemy, we first have to encrypt our GPS data, second learn to use the jammer finder feature to determine the direction of GPS jamming signal for targeting. Lastly every Soldier needs to be continuously trained on basic map reading and land navigation because the near peer enemy will attempt to deny GPS signals to disrupt movement and GPS guided munitions.

Finally, Electromagnetic Spectrum dominance/training is of the upmost importance. Electromagnetic Spectrum Managers are a huge vacancy problem, and we must get qualified Soldiers (SSG and above) identified and trained. Spectrum Management training also needs to be incorporated into warfighting scenarios. We have to train to manage a locations spectrum and be able to assist the EW officer with jamming targeting/ mission analysis to determine which part of



Spc. Steven So-  
khan, 28th Ex-  
peditionary Com-  
bat Aviation Bri-  
gade, talks over  
a Single Channel  
Ground and Air-  
borne Radio  
System during a  
field training ex-  
ercise.  
Photo by Cpt.  
Travis Mueller

the PACE plane should be used in the likelihood of full spectrum jamming. The Electromagnetic Spectrum will be contested in the near peer communications fight. Emphasis on training and execution is the only way close the gap.

An Information Network Engineer  
works to resolve a network issue with a  
user.  
Photo by William B King.

## **FA26 KNB Panels Convene in October**





## Office Chief of Signal

Functional Area (FA) proponents no longer compete in the centralized selection list (CSL) process for command and key billets. Proponents have the option to conduct a formalized panel to select officers for assignment to Key Nominative Billets (KNB) within their respective FAs.

As a result, Brig. Gen. Christopher Eubank, US Army Chief of Signal, has implemented a KNB panel for FA26 that mirrors the current Competitive Category Centralized Selection List (CSL) eligibility criteria and process.

“The KNB panel will use the same rigor, eligibility criteria, and administrative processes as CSL boards to maintain the trust and integrity of the selection process,” he said. “Ultimately, this process will support Army efforts to optimize talent management principles by selecting the best qualified officers

based on experience, knowledge, skills, and behaviors.”


The KNB panel will convene in October, focusing on the following current FA26 Key billets:

- Colonel - Director, TRADOC Capability Manager - Army Training Information System (odd years); and Commander, US Army Command and Control Support Agency (even years).

- Lieutenant Colonel – Odd Years: Commander, 2nd Information Operations Battalion, Regional Cyber Center (RCC) Directors, PAC, EUR, and, SWA (odd years); and RCC Directors, CONUS, KOR, and SWA (even years).

A recent MILPER message was issued explaining the KNB process and providing information on eligibility and how to apply. To begin, all applicants must be in the rank of major (promotable), lieutenant colonel (promotable) or colonel. Further requirements, as well as how to apply and contact information for any further questions, can be found [here](#).

FA26 Officers are expected to be agile and adaptive leaders who embody Army values. They are called to lead teams of technical experts in a variety of locations around the world, working with Signal and Cyber Officers to provide secure and reliable communications networks and information services.



Information Network Engineers (FA26) provide innovative communications solutions to warfighters.

Courtesy graphic

In the next issue of the

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